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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MOORE, KARLA A

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/695,726	Applicant(s) DANDO ET AL.	
	Examiner Karla Moore	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0505</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 26-30, 33, 39-42, 50-51 and 56-61 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,111,225 to Ohkase et al.

3. Ohkase et al. disclose an apparatus capable of chemical vapor deposition in Figure 2 comprising: a chamber (8) defined in at least part by a chamber sidewall; a passageway (adjacent G1) in the chamber sidewall extending from externally of the chamber to the chamber, and through which semiconductor substrates pass into and out of the chamber for deposition processing; and a chamber liner apparatus (50A) forming a deposition subchamber within the chamber, at least a portion of the chamber liner apparatus being selectively moveable to fully expose the passageway to the chamber and to fully cover and seal the passageway from the chamber (column 6, rows 6-27).

4. With respect to claim 27, the apparatus further comprises a movable substrate holder (14; column 4, rows 39-49 and 58-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement independent of movement of the substrate holder. The substrate holder is driven via a motor, 22. The chamber liner apparatus is not driven via the motor.

5. With respect to claim 28, the apparatus further may comprise a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement with of movement of the substrate holder (see column 9, rows 55-62).

6. With respect to claim 29, the portion is mounted for elevational movement, upward movement of the portion to a first position fully exposing the passageway, downward movement of the portion to a

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second position fully covering the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully covering the passageway if it started at a first position upward of the passageway.

7. With respect to claim 30, the portion is mounted for elevational movement, upward movement of the portion to a first position fully exposing the passageway, downward movement of the portion to a second position fully exposing the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully exposing the passageway if it started at a first position covering the passageway.

8. With respect to claim 33, Ohkase et al. disclose an apparatus capable of chemical vapor deposition in Figures 2, 8A and 8B, the apparatus comprising: a chamber (8) defined at least in part by a sidewall; a passageway (adjacent G1) in the chamber sidewall extending from externally of the chamber to the chamber, and through which semiconductor substrates pass into and out of the chamber for deposition processing; and a movable chamber liner apparatus (Figures 8A and 8B, 50B or 50C) forming a deposition subchamber within the chamber, the liner apparatus having an opening therethrough, the liner being mounted for movement to a first position in which the opening is aligned with the passageway and to a second position in which the opening is not aligned with the passageway, the second position fully covering and sealing the passageway from the chamber with the liner apparatus (column 6, rows 6-27 and column 9, rows 29-54).

9. With respect to claim 39, the apparatus further comprises a movable substrate holder (14; column 4, rows 39-49 and 58-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement independent of movement of the substrate holder. The substrate holder is driven via a motor, 22. The chamber liner apparatus is not driven via the motor.

10. With respect to claim 40, the apparatus further may comprise a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement with of movement of the substrate holder (see column 9, rows 55-62).

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11. With respect to claim 41, the liner apparatus is mounted for elevational movement, upward movement of the portion to the first position fully exposing the passageway, downward movement of the portion to a second position fully covering the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully covering the passageway if it started at a first position upward of the passageway.

12. With respect to claim 42, the liner apparatus is for elevational movement, upward movement of the portion to a first position fully exposing the passageway, downward movement of the portion to a second position fully exposing the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully exposing the passageway if it started at a first position covering the passageway.

13. With respect to claims 50, 51 and 56, the liner apparatus comprises opposing sidewall sections (inner-facing processing space and outer-facing passageway) and a base (associated with thickness of the liner) extending from and received between the opposing sidewall sections. The base is moveable with the sidewall sections.

14. With respect to claims 57 and 60, the apparatus further comprises a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement independent of movement of the substrate holder. The substrate holder is driven via a motor, 22. The chamber liner apparatus is not driven by the motor.

15. With respect to claims 58 and 61, the apparatus further may comprise a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement with a movement of the substrate holder (see column 9, rows 55-62).

16. The limitations of claim 59 are also disclosed in Ohkase and are addressed above.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claims 31-32, 34-38, 43-49 and 52-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkase et al.

20. With respect to claims 31-32, 34-38, 41-42 and 43-48, which are all related to the size and shape of the liner and its opening, Ohkase et al. disclose the invention substantially as claimed and as described above. As detailed above, the liner comprises an opening. The liner is capable of fully covering the passageway to the chamber (see Figure 2 and column 6, rows 14-20). Ohkase teach that the purpose of the liner is to provide uniform heat to the substrate and to prevent the formation of unwanted deposits on chamber walls (column 7, row 64 through column 8, row 11), similar to the claimed invention. Ohkase et al. also teach an opening is sized to allow the wafers to pass through (column 9, rows 37-38 and 46-47). Passage of the wafer is the intended purpose of the opening, as it is in the presently claimed invention. Ohkase et al. do not specifically teach the size or shape of the opening cross section, its relative size to the cross section of the passageway or the relative size of the liner (or portion of the liner) configured to cover the passageway to the size/shape of the passageway; however, as liner is sized and shaped to open and close the passageway and the opening is of appropriate size and shape to allow passage of a wafer, the liner and opening perform no differently than those of the presently claimed invention. In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art

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and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. The courts have also ruled that absent persuasive evidence that a particular configuration is significant; changes in shape are a matter of choice that a person of ordinary skill in the art will find obvious. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

21. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided the *liner* with an appropriate size and shape to cover or expose the passageway and with an *opening* with an appropriate size and shape to fully expose or fully cover the passageway in order to allow for uniform heating of the substrate, prevention of unwanted deposits on chambers walls and transfer of a wafer through a passageway and into the processing chamber as taught by Ohkase et al.

22. Further with respect to claim 32, only a portion of the liner may be selectively movable (50A; see column 6, rows 6-27) to fully expose and to fully cover the passageway to the chamber, another portion of the liner apparatus not being mounted for movement.

23. Further with respect to claims 34 and 35, the liner apparatus is configured to fully cover the passageway from exposure to the chamber in a second position (via rotation or vertical movement).

24. Claims 36-38 are related to the size and/or shape of the liner and the opening of the liner, which are addressed above.

25. Further with respect to claim 41, the liner apparatus is mounted for elevational movement, upward movement of the portion to the first position fully exposing the passageway, downward movement of the portion to a second position fully covering the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully covering the passageway if it started at a first position upward of the passageway.

26. Further with respect to claim 42, the liner apparatus is for elevational movement, upward movement of the portion to a first position fully exposing the passageway, downward movement of the

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portion to a second position fully exposing the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully exposing the passageway if it started at a first position covering the passageway.

27. With respect to claim 43, Ohkase discloses an apparatus capable of chemical vapor deposition substantially as claimed and comprising: a chamber (8) defined at least in part by a chamber sidewall; a passageway (adjacent G1) in the chamber sidewall extending from externally of the chamber to the chamber, and through which semiconductor substrates pass into and out of the chamber for deposition processing, the passageway having a total open cross section where it joins with the chamber; and a movable chamber liner apparatus (Figures 8A and 8B, 50B or 50C) forming a deposition subchamber within the chamber, the liner apparatus having an opening therethrough, the opening being at least as large as said total cross section of the passageway, the liner apparatus being mounted for elevational movement to a first position in which the opening is aligned with the passageway and to a second position (for example, rotated 180 degrees) in which the opening is not aligned with the passageway, the second position fully covering and sealing the passageway from the chamber with the liner apparatus (column 6, rows 6-27 and column 9, rows 29-54).

28. Claims 44-47 are related to the size and/or shape of the liner and the opening of the liner, which are addressed above.

29. With respect to claim 48, the apparatus further comprises a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement independent of movement of the substrate holder. The substrate holder is driven via a motor, 22. The chamber liner apparatus is not driven by the motor.

30. With respect to claim 49, the apparatus further may comprise a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement with a movement of the substrate holder (see column 9, rows 55-62).

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31. With respect to claim 52, the liner apparatus comprises opposing sidewall sections (inner-facing processing space and outer-facing passageway) and a base (associated with thickness of the liner) extending from and received between the opposing sidewall sections. The base is moveable with the sidewall sections.

32. The limitations of claim 53 are also disclosed in Ohkase and are addressed above.

33. With respect to claim 54, the apparatus further comprises a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement independent of movement of the substrate holder. The substrate holder is driven via a motor, 22. The chamber liner apparatus is not driven by the motor.

34. With respect to claim 55, the apparatus further may comprise a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement with a movement of the substrate holder (see column 9, rows 55-62).

Response to Arguments

35. Applicant's arguments filed 07/05/05 have been fully considered but they are not persuasive.

36. Applicant argues that the prior art liner fails to seal the passageway from the chamber. Examiner disagrees. In the sense that the liner secures against access or passage by a wafer, the liner does fully cover and seal the passage. It is true that the seal of Ohkase is not air-tight/hermetic and that the liner is not physically received against the walls of the processing chamber. However, it is also true that these limitations are not recited in the pending claims.

37. Applicant further argues that the liner of Ohkase does not comprise two sidewall portions and a base extending therefrom and received between such opposing sidewall sections. As described above, the liner of Ohkase comprises an inner side wall (facing center of processing space) and outer side wall (facing passageway) and a base (associated with the thickness of the liner) extending therefrom and received between the opposing sidewall sections.

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Conclusion

38. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Km
14 September 2005


Parviz Hassanzadeh
Supervisory Patent Examiner
Art Unit 1763